Job Submission Status & Plans

Dennis Box, FNAL REX/CD

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Outline

I. DAG/SAM/Job Submission Overview

- Full documentation and usage examples for SAM/DAG/jobsub integration
  - http://minerva-docdb.fnal.gov/cgi-bin/ShowDocument?docid=7936

II. Job Submission Future Plans Overview

- More detailed plan for where job submission is headed here:
  - http://cd-docdb.fnal.gov/cgi-bin/ShowDocument?docid=4789

I. DAG/SAM/Job Submission

- Jobsub_tools: a KITS product intended to replace minerva_jobsub and its support scripts
- Jobsub v0_6 implements SAM/DAG feature
  - Jobsub -h lists options by functional groups, the SAM Options group:

```
SAM Options:
  --dataset_definition=DATASET_DEFINITION
                        SAM dataset definition used in a Directed Acyclic
                        Graph (DAG)
  --project_name=PROJECT_NAME
                        optional project name for SAM DAG
```

Usage Example:

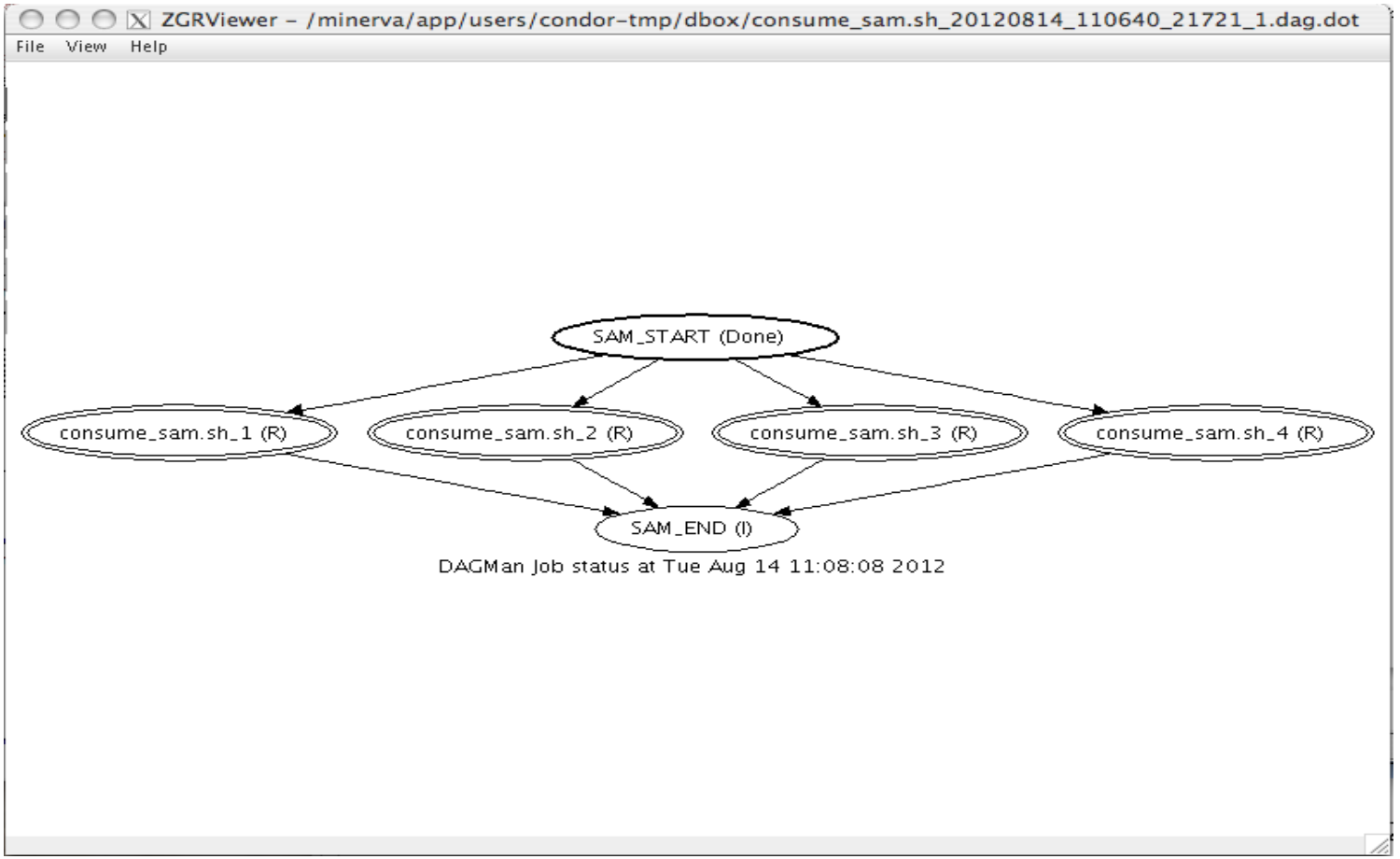
submitting the script in a DAG

```
$ source /grid/fermiapp/products/minerva/etc/setups.sh
$ setup jobsub_tools

$ jobsub --dataset_definition mwm_test_2 -N 4  ./consume_sam.sh
/minerva/app/users/condor-tmp/dbox/consume_sam.sh_20120814_110640_21721_1.dag
submitting....
Submitting job(s).
Logging submit event(s).
1 job(s) submitted to cluster 3997196.

------------------------------------------------------------------------
File for submitting this DAG to Condor           : /minerva/app/users/condor-
tmp/dbox/consume_sam.sh_20120814_110640_21721_1.dag.condor.sub
Log of DAGMan debugging messages                 : /minerva/app/users/condor-
tmp/dbox/consume_sam.sh_20120814_110640_21721_1.dag.dagman.out
Log of Condor library output                     : /minerva/app/users/condor-
tmp/dbox/consume_sam.sh_20120814_110640_21721_1.dag.lib.out
Log of Condor library error messages             : /minerva/app/users/condor-
tmp/dbox/consume_sam.sh_20120814_110640_21721_1.dag.lib.err
Log of the life of condor_dagman itself          : /minerva/app/users/condor-
tmp/dbox/consume_sam.sh_20120814_110640_21721_1.dag.dagman.log

------------------------------------------------------------------------
```

Monitoring:

- Web page showing progress of file consumption:
  - http://d0dbweb.fnal.gov:8080/station_monitor/minerva/stations/

- Zrgview command to view DAG progress
  - Jobsub writes DAG filename to stdout
  - Zrgview command runs on DOT file with same name as DAG file with .dot extension
  - export WHERE=/grid/fermiapp/common/graphviz/zgrviewer/
  - $WHERE/zgrview /minerva/app/users/condor-tmp/dbox/consume_sam.sh_20120814_110640_21721_1.dag.dot



II. Job Submission Future Plans

Goals

- Support multiple experiments and submission points

Realities (Constraints)

- Underlying architecture changes whether we want it to or not
- Experiment interfaces tend to freeze, development resources get reassigned

Future Plans (cont)

Strategy

- Standardize as much as possible
  - Can we get rid of minos_jobsub, nova_jobsub, minerva_jobsub and have everyone use the same jobsub?
  - If not, we can change exp_jobsub to be a wrapper that does experiment specific stuff and then calls jobsub
- Abstract as much as possible
  - The jobsub scripts are currently condor and bluearc centric
  - Keep interfaces but hide details so we can change when its forced on us.

Short term

•Standardization steps

- jobsub_tools KITs product contains jobsub, minerva_jobsub, dagNabbit.py and friends
- Scripts in 'old' location to be modified to urge users to migrate to new location
- Requested features will be available in new location, encouraging faster migration

Longer Term

Full explanation at
http://cd-docdb.fnal.gov/cgi-bin/ShowDocument?docid=4789

- Tarball submission – no bluearc needed to run
- Improved execution wrapper
  - Better coupling with monitoring web page/client
  - Communicates with output file server
- Output file server
  - Files sent to spool area
  - Output server handles transfer/change ownership
  - Reduces strain and dependency on bluearc
- Full client server submission architecture
  - Makes it much easier when we have to change back-end batch system
- Better queue implementation
  - (experiment) short, medium, long run times